2.7 Rational Zeros TH., Bounds, rule of signs(KEY)

1. $\pm 1, \pm\frac{1}{2}, \pm\frac{1}{3}, \pm\frac{1}{6}$

2. $\pm 1, \pm 3, \pm 9, \pm\frac{1}{2}, \pm\frac{3}{2}, \pm\frac{9}{2}$

3. $\pm 1, \pm 2, \pm 7, \pm 14, \pm\frac{1}{3}, \pm\frac{2}{3}, \pm\frac{7}{3}, \pm\frac{14}{3}$

4. $\pm 1, \pm 2, \pm 3, \pm 4, \pm 6, \pm 12, \pm\frac{1}{2,} \pm\frac{1}{3}, \pm\frac{1}{6}, \pm\frac{2}{3}, \pm\frac{3}{2}, \pm\frac{4}{3}$

5. lower bound, alternating signs

6. upper bound, signs all positive

7. lower bound, alternating signs

8. upper bound, signs all positive

9. 2 or 0 positives : one negative

10. one positive: one negative

11. one positive: no negative

12. no positive: 3 or 1 negative

13. x = 3/2, rational: x = $\sqrt{2}$, x = -$\sqrt{2}$, irrational

14. x = -3, rational: x = $\sqrt{3}$, x = -$\sqrt{3}$, irrational

15. x = -3, rational: x =$1+\sqrt{3}$, x = $1-\sqrt{3}$, irrational

16. x = 4, rational: x = $1-\sqrt{2}$, x = $1+\sqrt{2}$, irrational

17. x = -1, x = 4, rational: x = $\sqrt{2}$, x = -$\sqrt{2}$, irrational

18. x = -1/2, x = 4, rational: x = *i*, x = -*i* , complex!

19. 4

20. x^2+49

21. $x^2-6x+13$